

Wild Goose Storage Inc.
Presentation at the
Natural Gas Market Outlook 2006-2016

Future Demand Panel
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THE PROBLEM:

Under-investment in North America's energy infrastructure has contributed to recent crises such as the August, 2003 blackout and the natural gas price spikes that occurred during the last two winters.

The recently released NPC Report provides compelling evidence of the need for investment in natural gas to ensure we do not see such events being repeated. Some of the highlights of that report that are worthy of note include:

- Natural gas supplies have leveled or are declining, while overall demand is increasing
- The profile of gas demand itself is changing as stable industrial load is displaced by more volatile residential and commercial demand and gas fired generation
 - ❑ The new load represented by additional gas fired generation and commercial space heating load produces both a higher winter peak demand and a higher summer generation peak demand.
 - ❑ Such loads will require storage to be able to accomplish 2 or 3 cycles in a single year, while most utility storage was designed for single cycle operation. The capability for 2X or 3X cycling is found mainly in the newer independent storage fields.
- This new demand pattern produces high interday volatility as a result of weather variation, and also produces high intraday demand spikes due to the instantaneous nature of electric generation demand.
 - ❑ Multi-cycle storage facilities are by far the most efficient means of addressing the new volatility
- Recent mild weather patterns and depressed economic conditions in California may be masking an underlying potential crisis where peak demand will exceed deliverable supply
 - ❑ A cold, dry year combined with a significant upturn in the California economy would almost certainly strain our existing peaking infrastructure to or beyond the maximum.

- The NPC concludes that:
 - ❑ Cold winters could stretch storage capacity beyond previous limits, even in the near term
 - ❑ In North America the maximum gas cycled in and out of storage is 2.9 Tcf per year. This pushes the limits of injection/withdrawal capacity, and could cause extreme winter prices, demand destruction, low summer prices and production shut-ins
- New sources of supply such as frontier gas and LNG will be more expensive than storage and cannot be developed as quickly
- Existing transportation and distribution infrastructure will be strained when required to meet peak gas demands, while at the same time, the emerging demand profile will cause lower overall system load factors
- The ability of storage facilities to meet peak demands is often misunderstood. The changing demand patterns mean that average demand and average storage deliverability have little to do with the ability to meet the demands of a peak day situation
 - ❑ Inventory capacity or volumes are not the best measures of the ability to serve peak demand, withdrawal capacity is the key
 - ❑ Regulators have taken false comfort from the late surge in storage injection that raised inventory levels to historical averages. This summer saw moderate weather, little, if any, economic recovery, and demand destruction related to the recent price spikes
 - ❑ The status quo is a poor model for meeting the state's peak gas demand needs over the long term

THE SOLUTION AND THE CHALLENGES AHEAD:

We expect release of the Storage Sub-Task Report prepared in connection with the NPC Report in early 2004. The information contained in that report will substantiate the need for additional natural gas storage capacity in the near term. The NPC forecasts the need for over 100 Bcf of new storage for all of North America by 2005, and an additional 600 Bcf beyond 2005 to meet market growth.

In addition, the NPC concludes that regulators should allow storage operators to configure storage infrastructure and related services to meet changing market demand profiles.

However, investment in energy infrastructure cannot necessarily be expected to respond to need. Contributors to the problem include:

- Lack of available capital due to poor rates of return, and little long-term commitment to secure financing:
 - ❑ Decline of merchant energy - a segment with the expertise and willingness to make long-term commitments
 - ❑ LDCs are receiving conflicting signals from their regulators: e.g., to hedge or not, unwillingness to require or approve long-term supply commitments, etc.
 - ❑ Most storage remains highly regulated re: project approval timelines, market rates, and service flexibility, discouraging investment
- Risk adverse utility culture that resists investment until crisis demonstrates need
- Energy policies and regulations that may have outlived their time.

In Panel II.C. Wild Goose will address what it views as the most important regulatory policies needed to attract additional investment in cost-effective storage in California and throughout North America.